

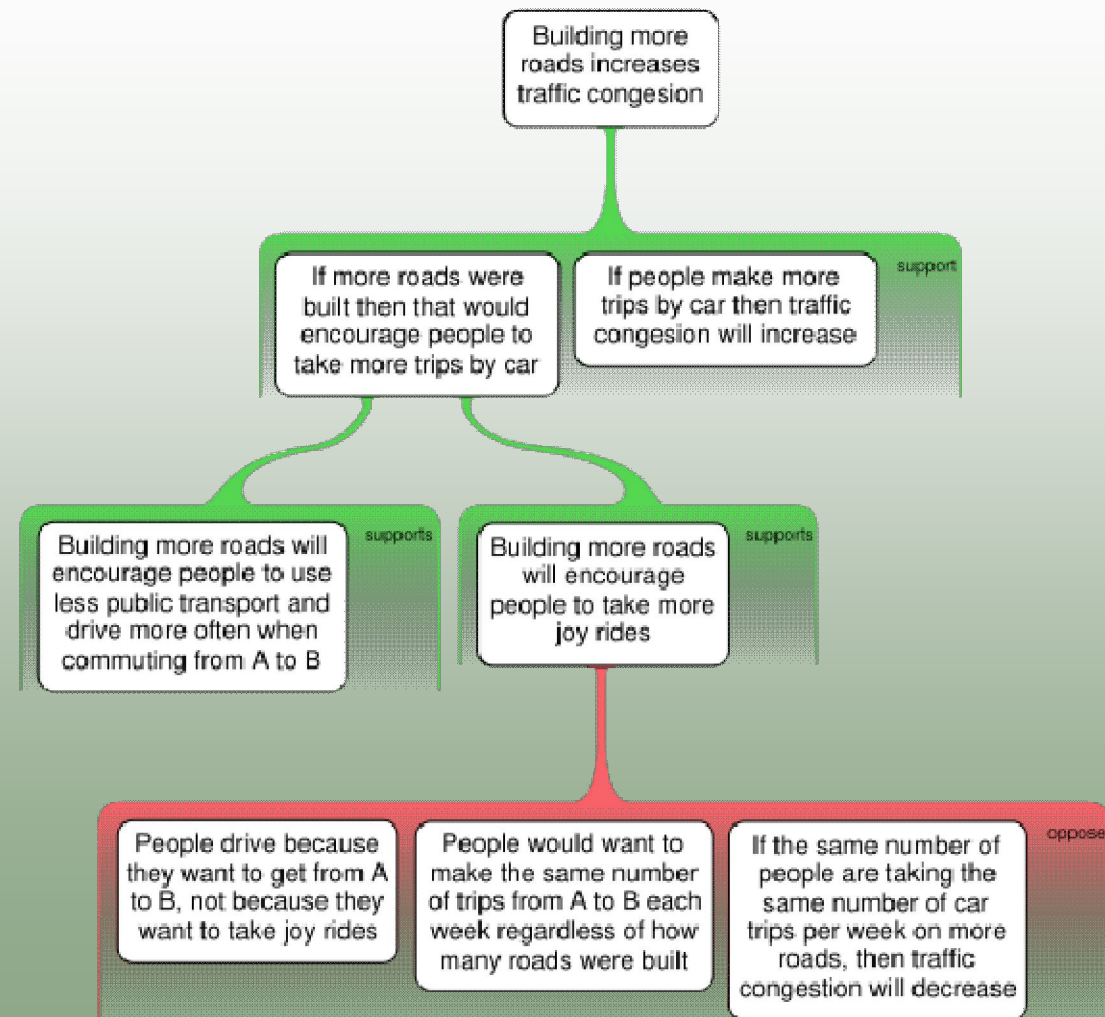
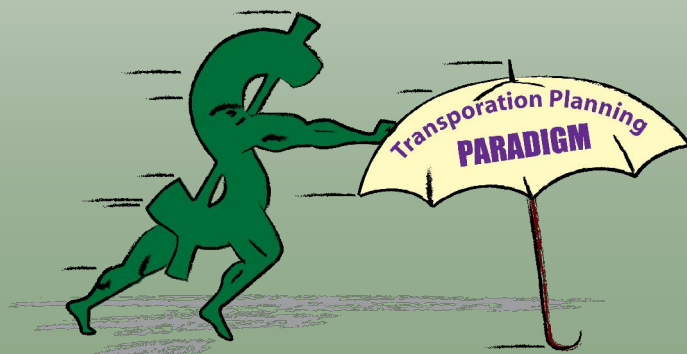
Understanding and Implementing Dynamic Traffic Assignment (DTA) for Practical Applications

Virtual Mentoring & Technical Support Center
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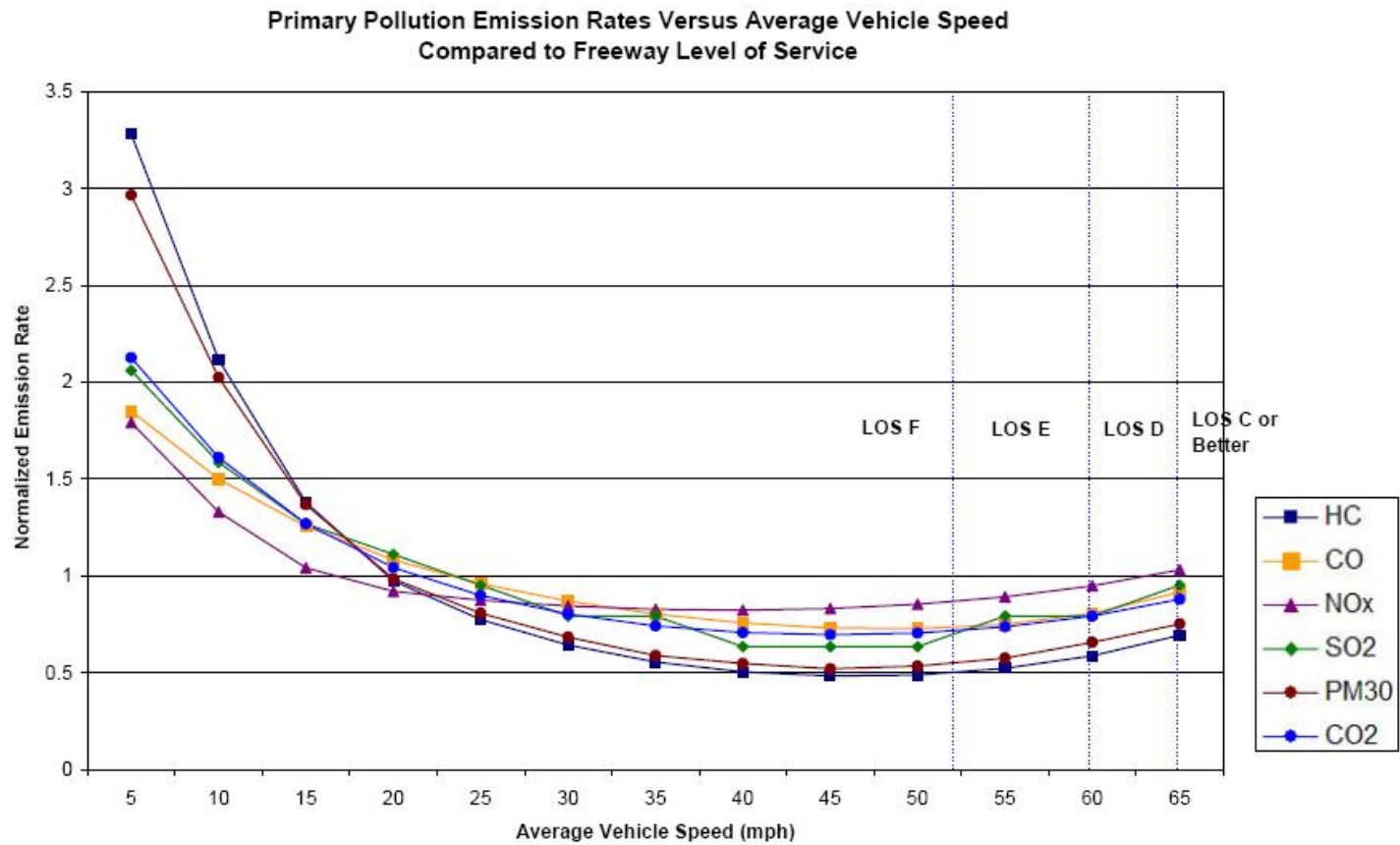
Background

- Increased congestion
- Limited financial resources
- Demand/supply interaction
- Complex questions



Why Use DTA?

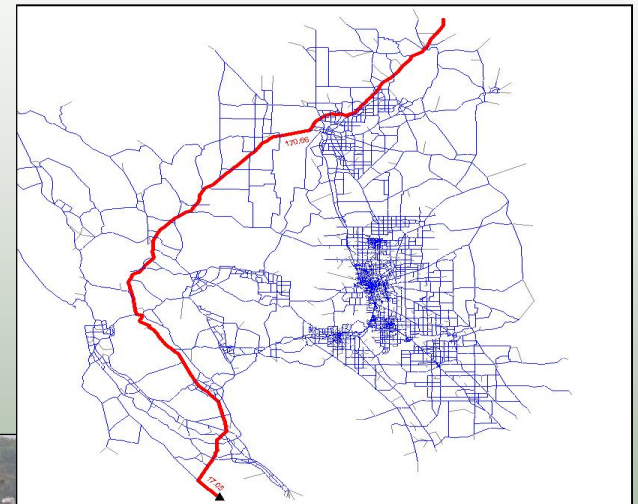
Climate Change Analysis



What is DTA?

Limitations of Typical Travel Model

- Travel time is only a cost that the assignment tries to minimize, not a constraint to how far the trip can actually go
- Intersection/link capacity
- Interaction between other vehicles



What is DTA?

Types of DTA Models

- Macroscopic – Vehicles represented as flow without consideration for size or storage space
- Mesoscopic – Vehicles represented as packets with total space on the link being allocated; no interaction between lanes
- Microscopic – Packets with space for each link; interaction between vehicles and lanes accounted for

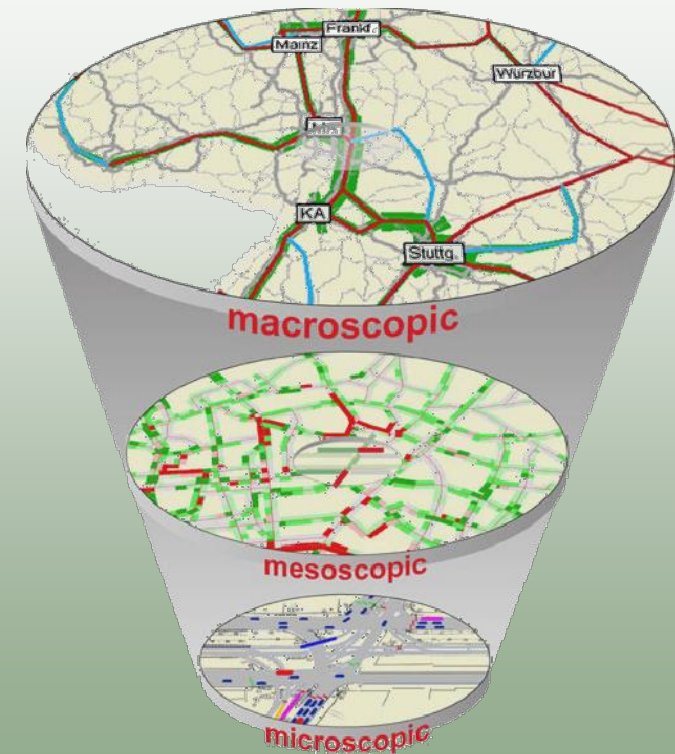
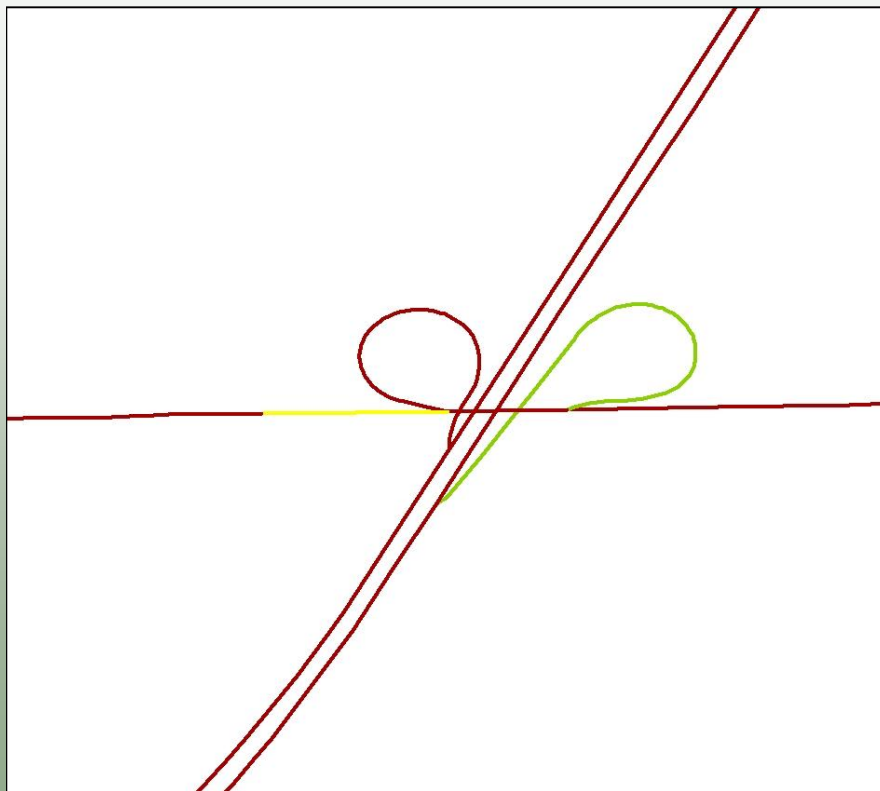


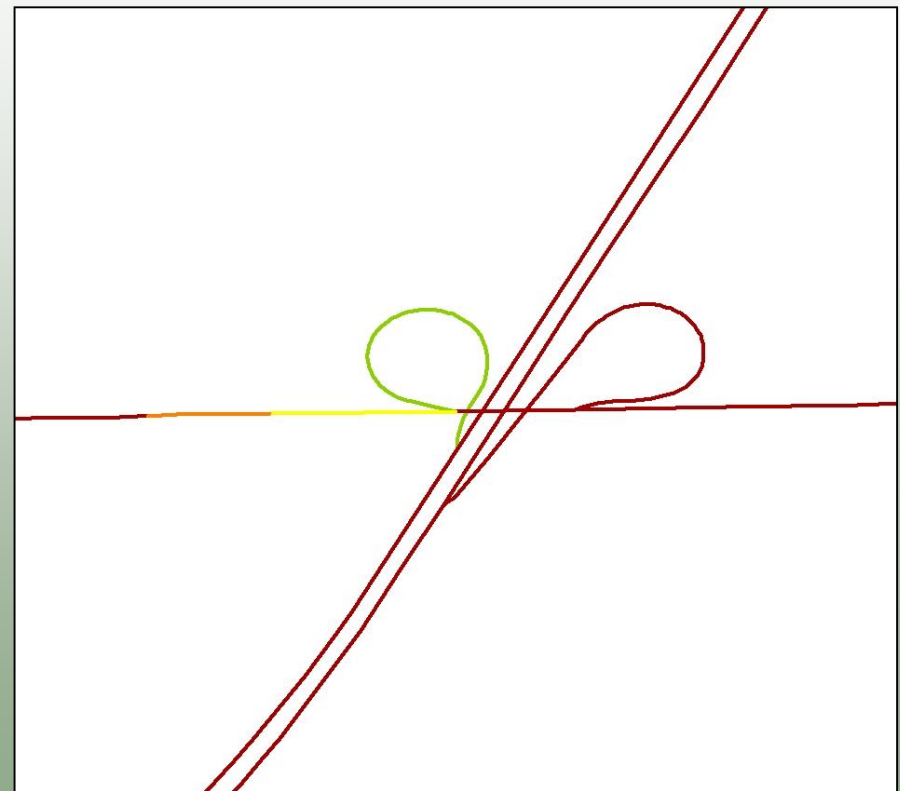
Image from PTV America website

Why Use DTA?

Link Level Output



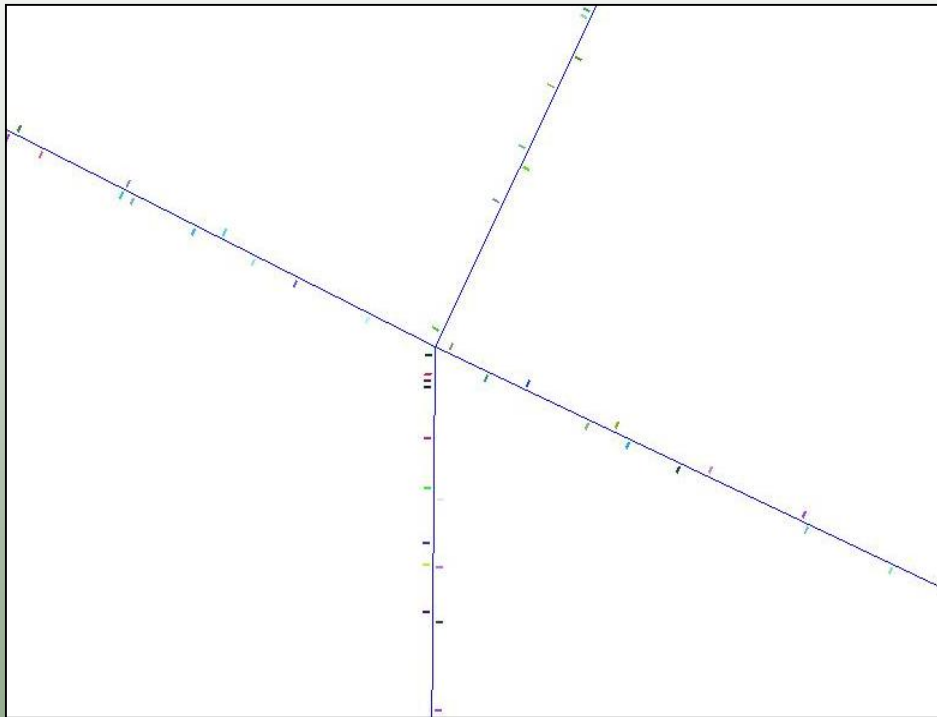
Static Assignment



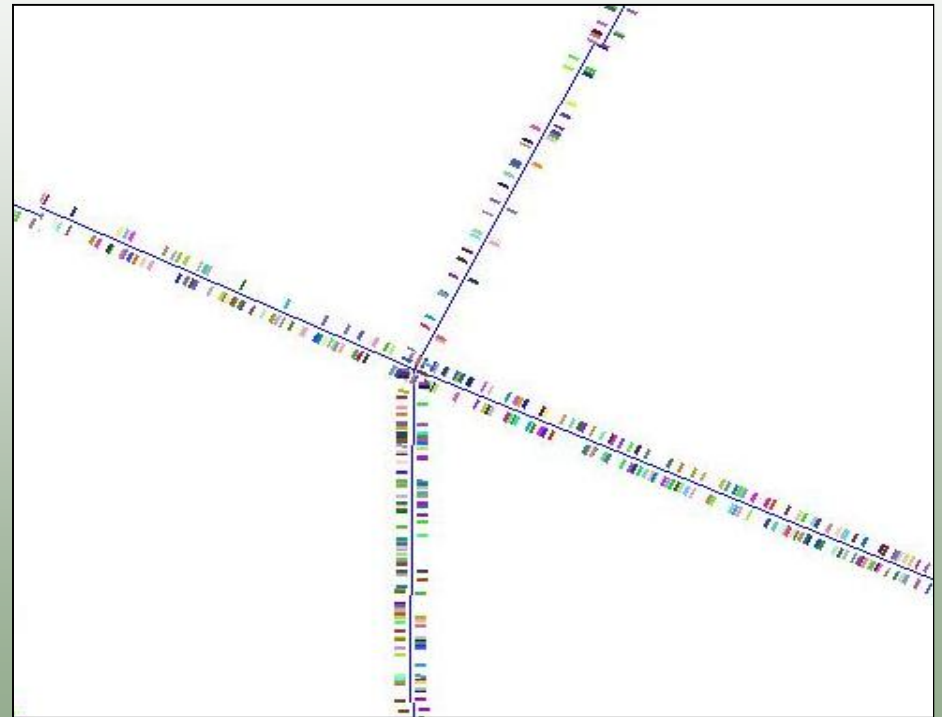
Dynamic Assignment

Why Use DTA?

Packet Level Output



Beginning of run



End of Run

Why Use DTA?

Lane Level Output

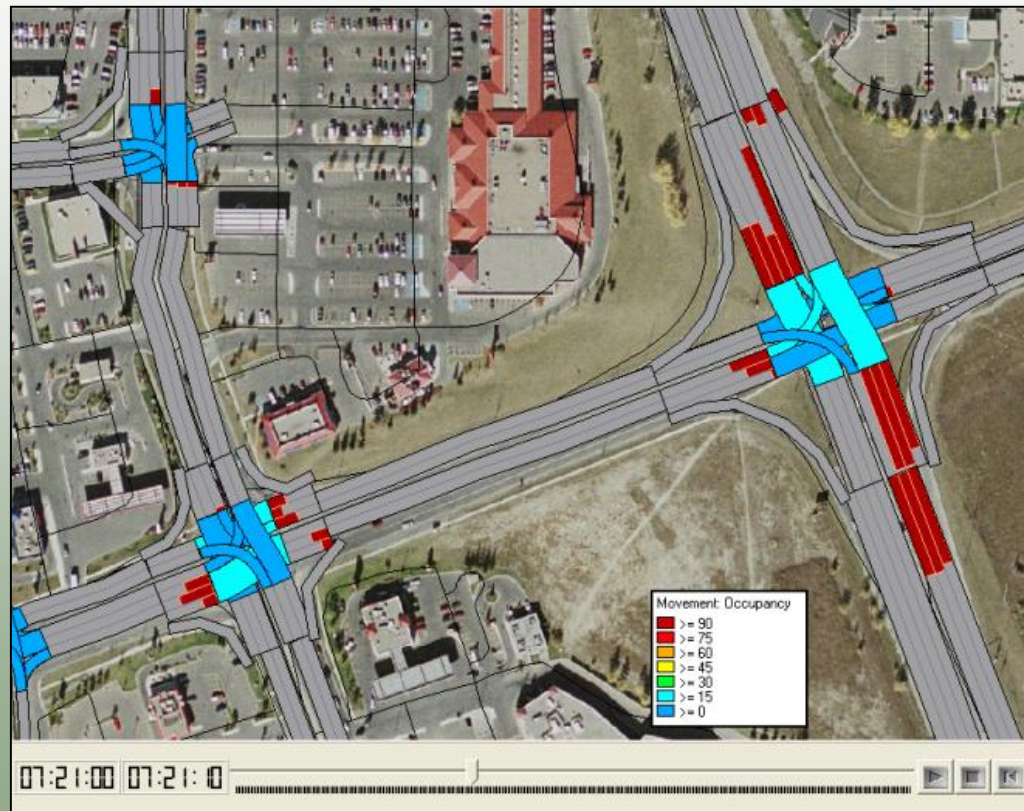


Image from Inro website

Amount of detail depends on study

- Macro/meso/micro
- Study area large enough to capture diversion
- Time dependent demand
- Large regional studies may not need intersection data
- Mode choice information may not be needed